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NATURALISM IN PEDAGOGY.

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The history of education shows that about the middle of the sixteenth century there was the beginning of a great change in methods of instruction. Previous to that time, the view was held that the mind was a great reservoir into which knowledge was to be poured; that memory was the chief faculty with which education was concerned; hence the methods of instruction were tested wholly by the facility with which knowledge was acquired or memorized. This finally led to such overloading of the mind, to such mental indigestion, that relief had to be sought.

By reference to natural processes, it was seen that the power of assimilation must be increased, reflection and judgment must be developed, greater freedom must be given. Nature as a teacher was consulted and followed. The results are before us for investigation. It is our purpose to ascertain to what extent nature should determine the manner in which the typical man should be educated. The point is already conceded that nature does furnish us with valuable examples and hints, but there may be danger in following her too closely. Reactions are quite liable to extremes, just as the pendulum, which swings too far in one direction, is almost sure to rise too high in the opposite part of its arc.

In the consideration of the subject of Naturalism in Pedagogy, we shall present it under five heads: 1. History of Naturalism. 2. Various Phases of Naturalism. 3. Helpfulness of Naturalism. 4. Insufficiency of Naturalism. 5. Conclusions.

1. History of Naturalism.

The origin of this movement can be traced to several causes. We have already intimated that the dulness resulting

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from mere memorizing was one of the evils from which relief was sought. The pedantry, barrenness, and tyranny of scholasticism, which simply philosophized about words, without seeking out the facts, was another cause. Coupled with these, was the general impulse towards free thought which burst forth in the Reformation. The human mind was freeing itself from ecclesiastical domination. Man was held responsible for his faith, and as the Bible sets forth the foundations for that faith, he must be taught to read and think for himself. Instead of aiming to keep him from independent thought by simply polishing the forms of thought, he was encouraged to investigate and reach conclusions for himself. Reason was emancipated.

Rabelais and Montaigne may properly be called the first of the naturalists, because they professed to follow nature in methods of instruction, and aimed to develop the entire nature of man, the whole man.

Rabelais sets forth his aims in his portrayal of Gargantua. He is the perfectly educated man because he is trained for practical life. All the more striking is the contrast he presents between the old and the new, because Gargantua is first educated by the old methods and rendered almost helpless thereby. He very wisely develops Gargantua's power of sense perception, because he recognizes that from that source he must get his fresh material for thought. Too long already the world had been grinding over the same old facts. No advance had been made, because there were no new facts from which to reach broader generalizations. Instruction was almost wholly confined to books, which had a narrowing, instead of a liberalizing, tendency. Under these circumstances, nature must be interviewed, so Rabelais emphasized the study of natural sciences and, as a natural consequence, condemned the too exclusive study of the humanities. But while seeking to make his education practical and liberalizing, he fell into the opposite extreme of making it impractical, because it included everything in science, art and literature, and required a longevity equal to that of Methuselah for its completion. It is very evident that he either misread nature in the extent of an education, or that she is misleading.

Montaigne had clearer views as to the proper ends of edu-

cation. He said that the aim should be, to produce not a man of learning, a pedant, not a humanist, not a realist, but a *man*. "It is not a soul, it is not a body that we are training up, but a man, and we ought not divide him." He severely criticised the humanistic education. "I am scandalized that our whole life should be spent in nothing else than the study of languages." "From our constant study of words the whole is nothing but babble." He drew from nature the important lesson, that as plants are stifled by too much moisture, so the soul is stifled by too much learning. "A well made head is better than a well filled one."

The power to assimilate and utilize he regarded as of the highest value. "The dancing master might as well attempt to teach us to cut capers by our listening to his instructions without moving from our seats, as the tutor to inform our understandings without setting them to work." "Savoir par coeur n'est pas savoir." He advocated earnestly the need of making the act of learning attractive. "Away with this compulsion! than which I certainly believe nothing more dulls and degenerates a well descended nature." He also urged the helpfulness of providing objects for study. "Let our pupils be provided with things; words will follow only too fast. The world is given to babbling."

Montaigne's general conception of education was that it was a process of growth, not a mere accumulation of knowledge. Ratich claimed he had discovered the art of teaching according to nature, and that by it a foreign language could be thoroughly taught in six months. This claim sounds like quackery and inclines us to reject his ideas *in toto*; nevertheless he set forth some excellent pedagogical principles. His central principle in the acquisition of languages was repetition. The following are some of his favorite maxims: "Teach everything in its own time and order, according to nature." This is a rather vague statement and is not fully illustrated by his own work. "Everything without coercion. The human understanding is so formed that it best retains what it finds pleasure in receiving." But it must be trained also to receive that which is at first distasteful. "*Per inductionem et experimentum in omnia.*" He held that nothing should be received on authority, a very evident mistake, because the accumulations

of knowledge in the past could not be accepted on faith.

Spencer seems to believe that we know only what we have observed. If this be true, then our knowledge must necessarily be exceedingly limited, and progress only possible at a very slow rate.

Bacon powerfully affected the trend of thought towards nature, and made it more fruitful. His method of interrogating nature for facts, was readily transferred to the educational field, and eventually revolutionized educational methods. The laws of scientific investigation become also the laws of educational investigation, hence not authority, but facts, from that time forth largely determined pedagogical principles. The order of nature must now be followed, i. e., the process of discovery must become the best mode of acquiring knowledge.

This idea seems to have impressed itself strongly on nearly all the naturalists, and was, no doubt, inspired by noticing the deep interest with which the discoverer proceeds with his investigations of things about him. No one can question the high practical value which attaches to knowledge thus acquired, the ability to utilize, which is developed, and the exceeding attractiveness of the method of acquisition; but to apply it rigorously would not only shut us out from the grand inheritance of the past, but also make further progress impossible. We would not be granted that inestimable privilege, which we now enjoy, of standing on the shoulders of past generations and gaining a broader outlook.

Comenius saw the applicability of Bacon's inductive science in developing pedagogy, and set before himself the task of working out its fruits. He also sought to work out some of the pedagogical ideas of Ratich. Impressed with the defects and gaps in education, such as the neglect to keep the understanding and the tongue on parallel lines, so prevalent then, he said, "I could not restrain myself from attempting something that might rest upon an immovable foundation, and which, if it could be found out, should not be subject to any ruin. Therefore after many workings and tossings of my thoughts, by reducing everything to the immovable law of nature, I lighted upon my Didactica Magna, which shows the art of readily and solidly teaching all men all things."

His "immovable law of nature," although not clearly set

forth, evidently led him into the exceedingly profitable investigation of the growth and development of the mental powers, and how to secure their highest development. He discovered that the senses were most active in childhood, later the memory and the imagination, and still later the judgment and the reason. As a naturalist, he wisely concluded that the teacher should co-operate with nature, and so plan the pupil's work that it would call forth those faculties which are the most active, and therefore the most educable.

He thus first brought to notice the great importance of making psychology a means to determine the natural order of mental development. This discovery of the psychological order and its utilization, was one of the greatest events in the history of pedagogy. Its regenerative influence began to be felt at once, and its fruitfulness is ever increasing. We honor Comenius to-day with the eminent title, "The First Evangelist of Pedagogy."

Following his general principle of keeping the understanding and the tongue on parallel lines, he published his *Janua Linguarum Reserata* and *Orbis Sensualium Pictus*, the latter of which presented, by means of pictures, representations of objects in lieu of the objects themselves. This was the practical application of the intuitive method, and was an extraordinary success.

In harmony with the law of reactions, we find that the reaction from too much attention to the forms of thought, too great dependence upon intellectual intuitions, is followed by too much attention to observation, too great dependence upon sense intuitions. Comenius teaches, "There is nothing in the understanding that was not first in the senses, and consequently it is to lay the foundation of all wisdom, of all eloquence, and of all good and prudent conduct, carefully to train the senses to note with accuracy the difference between natural objects."

He taught that all man's faculties should be developed and trained, that the end of all culture should be the perfect man, that learning should be made agreeable, that the studies should be graded, that the objects should be placed before the pupils in studying,—the object lesson method,—and that things to be done should be learned by doing them, or, as the statement is now commonly made, "Learn to do by doing."

Locke emphasized Montaigne's views about educating the senses. Although he attached much importance to the practical side of education, yet he denounced education in the public schools, where children coming in contact with each other are, at least in some measure, prepared to defend their rights and thus are fitted for real life. He exalted physical education, and made development of power, rather than acquisition of knowledge the chief aim. "They (children) should seldom be put doing even those things you have got an inclination in them to, but when they have a mind and disposition to it."

If this is nature's teaching, is it not, at least, contrary to reason? Many of life's duties lie outside the field of inclination, and we must all learn the lessons of obedience, of self-control, of self-denial. To gain the power of self-direction, to rise superior to adverse circumstances, these are the sublimest possibilities within the sphere of education.

Rousseau was largely indebted to Locke, but pushed his views to extremes. As a naturalist, he was the most radical, paradoxical and illogical. In fact, his views are regarded by even the followers of naturalism as largely erroneous, yet his radicalism accomplished much good. His central thought was: Nature is wholly good, therefore study and follow nature; remove everything which will impede her work. Civilization fosters vice. Society is responsible for all evil, therefore return to a state of nature.

Had Rousseau taken the pains to examine carefully his own nature, he would have found evidence sufficient that society was not responsible for his own depravity; for it cried out in vain against his vices. How weak, too, his defence of himself on the ground that he was moral because he *loved virtue.*

Some of his ideas were excellent. His "Emile" did more to draw attention to and arouse thought on educational matters than any other work, but largely through provoking discussion on account of his paradoxes and radicalism. His errors were many, such as, "For the body as for the mind, the child must be left to himself." He ignored the unity of the mind, cutting up life into distinct stages. Emile was wholly unnatural.

Pestalozzi stripped some of Rousseau's ideas of their inconsistencies and made a partially successful application of them. He sought the harmonious development of all man's powers, through following the methods indicated by nature. His faith in the transforming power of human love was unbounded. He discovered the right use of the object lesson method, and taught that knowledge was obtained by investigation, not talking about it. "Spontaneity and activity are the conditions in which mind educates itself." "The fundamental error,—the blind use of words in matters of instruction, —must be extirpated before it is possible to resuscitate life and truth." "All education must be based on the learner's own observation, on his own personal experience. This is the true basis of all knowledge."

2. Various Phases of Naturalism.

Having now before us the leading features of the naturalistic school, we are prepared to enter into a discussion of them.

The first impression made by an investigation into naturalism is the variety of phases it takes. While all seem to speak with some definiteness and assurance, yet a careful analysis of their utterances gives vague results. The entire school, from Rabelais to Pestalozzi, is characterized by variety and vagueness.

Rabelais and Montaigne seem to have derived their ideas of educational process from a study of the laws of growth in the vegetable world. "As plants are stifled by too much moisture so the soul is stifled by too much learning." Many of the naturalists followed, apparently, those suggestions, and developed some pedagogical principles. Rousseau's extreme ideas of freedom were taken from the unimpeded, spontaneous growth of the plant. The law of nature among these naturalists was evidently, then, the law of simple vegetable growth, which, however, readily suggested the higher law of action and growth in man's physical and mental development.

Montaigne saw the application to be made from the assimilation of food. Unless the mind assimilates its mental food no proper development or strength follows. To him, therefore, education was a process of assimilation and growth, not a mere accumulation of knowledge. It was, then, the same law of nature, but manifested in a higher form.

Comenius saw that there was still a broader application of this law of nature in man's mental growth and development. He noted the spontaneous activities of the child-mind, and discovered the order in which its faculties developed.

But we make a serious mistake when we attribute the grand results attained by Comenius chiefly to his adherence to his "immovable law of nature." The discovery of the inductive method by Bacon, no doubt, suggested to Comenius the thorough investigation of mental phenomena, according to that method, and thus made possible the grand results which he attained. We do not wish to deprive Comenius of any of his well earned honor, but to point out that his discoveries were due more to his skillful application of Bacon's inductive method, than to his "immovable law of nature."

Can naturalism, then, claim the inductive method as one of its results? That it seeks to interpret the facts of nature is not a sufficient reason for making such a claim. It does not appear that it was suggested by observing nature. In fact it is evident that it was evolved, originated from the great mind of Bacon. Reason rose here superior to nature, and indicated a method which is broader than those which nature usually suggests.

It might also be pointed out in this connection that Comenius' discovery of the psychological order was largely due to his well disciplined reasoning powers, which from a mere hint were able to follow out the logical conclusions of the whole matter.

Rousseau, however, reached the extreme exaltation of nature as a teacher. He made her a goddess whose processes were infallible, whose results were always most valuable. He seemed to find this goddess manifesting herself in the laws of action and growth and also in the natural impulses of man, or man's nature. These manifestations he treated as alike positive, certain and unchangeable. Nature does act unchangeably in growth in the physical world, but man's nature is constantly changing. Because he is a self-active being, he is constantly modifying his environment, and this in turn, reacts upon his nature. Human nature of the seventeenth century was very different from the human nature of to-day. The Roman before the Christian era possessed traits of character which

were in striking contrast to those of the average American. Education in the family, in the schools, in civil institutions, is constantly modifying human nature. Laws, customs, in short, all the educational influences, whether they belong to the "occult coadjutors," or to the visible and intentional influences, are rapidly producing great changes. Human nature, then, in this view of the case, is largely what the race has made it; hence to look to it for direction is, after all, only to look to our own wisdom for guidance.

Enough has been said to show that naturalism is not clearly defined in the minds of its advocates. Although they speak apparently in a positive manner, and use some definite expressions, such as "immovable law of nature," "nature's the only method of instruction," yet they leave us in doubt just what they mean, because of their various ideas.

3. Helpfulness of Naturalism.

Naturalism has proved helpful in its suggestions as to right methods.

a. A study of the mental development of a child shows sense-perception, memory, imagination, reflection, and reason as the natural order of mental development and activity; hence follows the rule that in early life, instruction must appeal largely to the senses, later to reflection and reason. Care, however, must be exercised that, in our efforts to follow the psychological order of studies, we do not run counter to the logical sequence of studies. The two do not always harmonize.

Another caution is also necessary here, and that is, that we do not run into the error of unduly exalting object lessons and carrying sense training to excess.

b. Under the natural impulse of curiosity, discovery is delightful to the child; therefore make him a discoverer. Do not teach him to accept anything on faith. He thoroughly knows only what he has investigated for himself. Such knowledge is most helpful and fruitful.

The caution needed in this matter is that by this method too much time will be consumed in acquisition. Some knowledge must be accepted on faith, otherwise the investigations of others will avail us nothing.

c. Under the impulse of pleasure, through spontaneous

effort, the child acquires rapidly; therefore make all educational work pleasurable, attractive.

This proposition and conclusion seem so evident that we are suprised it was not accepted earlier. That this has regenerated school work, making it much more fruitful, is well known. Care must also be exercised in observing this principle, because life is largely made up of unpleasant duties, and it would be manifestly unwise to lead the child to expect that every duty should be made pleasant. The highest, most helpful discipline is derived from performing difficult, arduous and painful tasks.

d. Development usually follows activity of both mind and body, hence exercise develops all the powers of body and soul. Out of this grows many familiar statements, such as, "Exercise strengthens faculty," "Repetition is the mother of studies," "Learn to do by doing," etc.

We need to remember in this connection that blind acting may do harm. Aims must be known and rational means sought out before wise activity can be realized. "Learn to do by doing," is one of the most familiar statements which has grown out of naturalism. That it contains an important pedagogical truth, cannot be denied, but entirely too much value is claimed for it. We learn to do by doing. Practice makes perfect. Skill is highly prized, because it has great value; but we must not lose sight of the entire process in our admiration of the result.

There is a preliminary step to doing which is of the utmost importance, without which the doing must result largely in failure, and that is a proper conception of *how* to do. In all constructive efforts, a definite idea of what is to be done must first be conceived, and then actualized. To do otherwise is to invite failure. Unfortunately the impression is made that if we simply begin to do we will in some blind way learn to do, just as the child in his restlessness, though unconscious of any advantages accruing to himself, acquires strength of muscle. While this is a beneficial law of our physical being, yet even here far more beneficial results can be realized from it by carefully planning beforehand the best means of reaching the end sought. When, however, we look into the results to be attained in the mental and moral world we find that its

advantages are almost wholly lost without careful planning how to realize them,

To such erroneous ideas as these can be traced many of the failures in teaching. Encouraged by this statement, the future teacher does not place sufficient value on the formation of a proper conception of the process of teaching and of the end to be attained, but expects to learn to teach by teaching. Such empiricism has been the curse of our schools in the past and will continue to be in the future, if such a view of this principle obtains. The teacher above all others must be impressed with the necessity of forming proper ideals. His work cannot possibly rise above mediocrity, without a high ideal toward which to strive. Not only must he form this high ideal in order to assure his own success, but he must also inspire his pupils to form such ideals for themselves, because this power of idealizing and then actualizing is the grandest power, the most potent factor in human progress.

"Learn to do by doing," is pedagogically of great importance in its application to the formation of habits. Repetition lessens resistance to activity, but thoughtless repetition does not necessarily educate. The increments resulting from repetition arrange themselves without any reference to the welfare of the individual. The tendency is developed whether it leads him astray or otherwise. Habit, like all the laws of nature, is blind. It does not seek right direction, but is utterly indifferent as to its tendency. We readily recognize the wisdom that prevents the laws of nature from exercising the least volition as to the effects they are to produce. The slightest degree of variation would result in chaos.

We are then not to expect any beneficent results from the power of habit, unless we wisely plan to utilize its forces. Water, under the influence of gravitation, properly conducted may be made to irrigate and make fruitful the fields, or, unwisely restrained, will burst finally its barriers and carry death and destruction in its path. Gravitation can in no wise be held responsible for the widely different results, but the merit or censure properly applies to man's management or mismanagement.

So with habit; it will work out to our highest development or do us the greatest harm, just in proportion as we

wisely plan or neglect to utilize its potent influence. Everywhere our highest development and progress depends upon the culture and wise guidance of our reasoning powers.

4. Insufficiency of Naturalism.

a. Nature directs activity outward to things of sense. It constantly presents external objects to man's senses, and thus is developing his power of sense perception. This is well enough as far as it goes, but the development of the senses is limited. They soon attain their greatest acuteness and further progress ceases.

b. Nature appeals largely to the feelings, and unduly develops them. The child of nature is always characterized by strong impulses and feelings. They sway him and often render wise conclusion impossible. Intense feeling is antagonistic to careful thinking. The degrading tendency which often manifests itself in things of sense is clearly shown in the common meaning attached to the word sensual. Appealing much to sense and feeling tends unduly to magnify the animal nature. Man needs to direct himself more by his reasoning powers.

c. Nature is unable to develop the highest power of abstract thought. It is constantly directing man's attention to the external world, and away from the internal world of thought. It may arouse thought and lead him to form simple judgments and generalizations. In fact its ifluence is to lead him away from attempting to make such generalizations, by the superior attractions of the objects of sense. The savage, although he is taught by nature to become exceedingly skilful in interpreting the signs about him, yet never attains the power of generalization. Although constantly observing, he never learns science, because he lacks in scientific induction. Thought must rise from thing to cause, from cause to cause, etc., hence the true reality is attained by thought and not by sense perception.

d. Nature instructs by individuals and not by generals. There is no such a thing as a general or type in nature. It cannot produce one. The only generals are those we form in thought. All objects are in the concrete and it can only present them in the same form. Abstractions are entirely thought products.

e. Nature develops unsymmetrically. Sense perception is rendered wonderfully acute, while the power to reason is scarcely developed at all. Nothing further need be said on this point than simply to call up the one sided development of the savage.

f. Nature makes no departure from fixed lines of action. This, as we have already pointed out, is an absolute necessity, but it, all the same, disqualifies nature for being the best teacher. The wise teacher does sometimes vary, does sometimes intervene for the good of the child, because he is not dealing with inanimate or soulless matter, but with mind and will capable of self direction. That will can render nugatory all the teacher's efforts, unless he secures its co-operation.

g. Nature acts relentlessly and with severity. This grows out of the fact that it cannot depart from fixed lines of action. A child may walk over a precipice and be dashed to pieces, or pick up a red hot iron and maim his fingers. For the teacher to act on the same principle would be the height of cruelty.

h. Nature unassisted fails to produce the highest results. The grape-vine left to itself runs largely to foliage. In order that it may become fruitful, it must be pruned. This is a wholly unnatural process, a rational process, by which nature is improved, and is suggestive of the need, at times, of severe discipline in education.

Rousseau would claim that the necessity for pruning had arisen through man's interference with nature, that man had brought about unnatural conditions. That man does modify nature's results, that he can react on his environment, are sublime facts, fraught with grand possibilities for his development. That he has always wisely utilized his possibilities cannot be claimed. But all history proves that wonderful progress has been made, especially in those periods when thought was emancipated.

Man is largely in bondage to external nature. He must provide himself with food, clothing, and shelter. These necessities press vigorously upon him. It is a severe struggle to provide for them, but through education he is gaining the mastery. Through the development of the power of self-direction he is rising superior to his environment. He finds himself

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greatly hampered by his lower or animal nature. His appetite and passions seek to assert themselves and control him. He realizes something of his dignity in the controlling power of his will, and determines to develop the power of self-control.

In order to attain this in the highest degree, he must broadly develop all his powers, especially abstract reason and conscience, so that a high ideal may be formed. This ideal must be actualized through the power of self-direction aided by habit. Herein is the great sphere of pedagogy.

The realization of this power to project an ideal and to actualize it, demands the highest development of the reflective faculty and the will. As we have pointed out, nature alone cannot develop the power of abstract thought; hence in this very fact lies nature's greatest insufficiency. Unless it is supplemented at this point by art, it fails in attaining the chief end in education.

It is hardly necessary to state that we have taken for granted that the results chiefly attained through rational processes were not to be attributed to naturalism.

5. Conclusions.

Naturalism has furnished many valuable suggestions for the guidance of the educator.

a. It has led to the observance of the order of mental growth.

b. It has stimulated a careful investigation into the order of studies.

c. It has suggested some ideas as to methods of instruction, such as the utilization of curiosity, attractiveness and repetition.

d. It has, however, led into many errors, owing to its vagueness, or difficulty of interpretation.

General Conclusion. Gladly entertain the suggestions which naturalism makes, but make them run the gauntlet of every rational test, before accepting and utilizing them in educational work.